"THE SOVIET ECONOMY UNDER A NEW LEADER"

A REPORT

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SUBCOMMITTEE ON ECONOMIC RESOURCES, COMPETITIVENESS,
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The Soviet Economy Under a New Leader

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The Soviet Economy Under a New Leader

Summary

During the year he has been General Secretary, Mikhail Gorbachev has shown himself to be the most assertive leader since Khrushchev. He has accumulated power by virtue of his strong personality and by inserting his own cadre into key positions. Moving forcefully to place his personal stamp on economic policy, he has announced an ambitious strategy for modernizing the economy.

Gorbachev's plans call for boosting economic growth through massive replacement of outdated plant and equipment and an emphasis on high-technology industries. Both the general program goals he has laid out in public speeches and the investment targets set forth in the 1986 Economic Plan would require record growth in the machinery allocated for modernizing Soviet plant and equipment. The machinery needed for industrial modernization is produced in the USSR in the machinery and metalworking sector--which is also the primary source of production of military hardware and consumer durables.

In the near term, the Soviet defense establishment is well positioned to accommodate the possible shifts in machinery demand implied by the industrial modernization program. Since the mid-1970s, major investments in defense industrial facilities have resulted in a substantial expansion and upgrading of defense industry. As a consequence, most Soviet weapons expected to be delivered to the Soviet forces through 1990 will be manufactured in plants already built and operating.

Competition for resources could be intense, however, for some basic materials and some intermediate goods, such as high-quality steel and microprocessors, and for skilled labor--resources traditionally supplied on a

priority basis to military production. This competition could result in some trade-offs at the margin between military and civilian production. Nevertheless, in view of the immense sunk costs for plant and installed equipment in the defense production facilities, and the fact that these cannot be readily converted to civilian use, the industrial modernization goals are unlikely to significantly impede the completion of the major deployments of strategic weapons that the Soviets have programed through the 1980s.

At this stage, Gorbachev's economic policies appear to command widespread political support--both because of the consensus for the need to revitalize the industrial base and because defense procurement programs are largely unaffected in the near term. A number of senior military officers, moreover, have declared that industrial modernization is necessary if the USSR is to meet the technical challenge of the 1990s. The real test of Gorbachev's support will come in two or three years when renewed demands for expanding and renovating defense industries begin, as defense industries have to start preparing to produce new generations of weapons. How the Soviets are able to deal with their resource allocation problems then will depend on their success during the next few years in raising productivity, increasing the supply of advanced machinery, and building more modern industrial facilities.

Introduction

This joint CIA-DIA report reviews the current state of the Soviet economy and its probable direction after the first year of Gorbachev's stewardship. It begins by briefly discussing the economic situation when he took over with special reference to the defense sector. It then describes what Gorbachev appears to want to achieve with respect to the economy and the military, and how he plans to go about achieving his goals. Finally, the report analyzes the implications of the new General Secretary's gameplan for resource allocation and evaluates its prospects for success.

Before turning to these issues, a methodological note is in order. Past assessments of the Soviet economy and defense expenditures submitted to the Joint Economic Committee by CIA were conducted using a 1970 ruble price base. The analysis in this report was carried out in 1982 prices. The move to a more recent price base culminates a three-year research effort and allows us, we believe, to give a more accurate assessment of the resources associated with Soviet production. Although the basic trends have not changed, the use of 1982 prices has resulted in somewhat different estimates of historical growth rates for the Soviet economy, as well as the share of GNP devoted to consumption, investment, and defense. These findings are discussed in more detail in Appendix A.

Gorbachev's Inheritance

When Gorbachev came to power in March 1985, he inherited the world's second largest economy. It possessed a number of major strengths, including a highly skilled workforce and an enormous resource base. Nonetheless, over the past decade, despite continued growth, the gap between economic performance and plans and expectations had been widening, forcing Soviet leaders to turn

more and more of their attention to the country's economic problems. For example, despite generally increased use of fertilizers and other key resources in recent years, growth in agricultural output had failed to keep pace with the increase in population for a decade. Industry had also failed to live up to expectations. Problems in the energy, steel, and construction materials sectors, coupled with occasional transportation bottlenecks, had restricted industrial growth during 1981-84 to only about half the planned rate. The net result was that Soviet GNP growth during the 11th Five Year Plan (1981-85) appeared headed for its worst showing in any FYP since World War II (see Figure 1).

Moscow's basic problem was that by the mid-1970s the simple growth formula that produced major economic gains in the post-war period--ever increasing inputs of labor and capital resources--was no longer feasible. Over the past decade, the USSR had experienced:

-- Near stagnation in steel output.

-- A precipitous rise in energy and other raw material costs.

-- A sharp fall in investment and labor force growth.

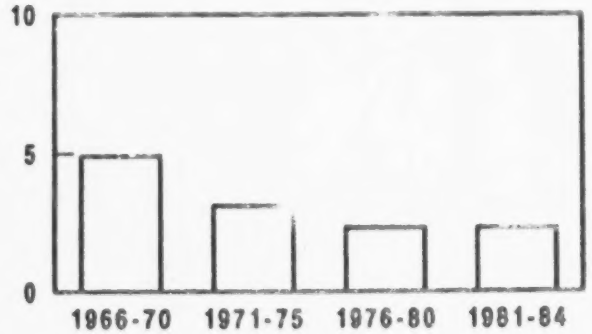
-- A decline in productivity.

Gorbachev's predecessors recognized these problems and indicated, at least rhetorically, that in the future the economic system would have to operate differently if it were to meet the USSR's needs. Efforts to increase the quality and quantity of output and make better use of available resources in the economy--i.e., a switch to a pattern of "intensive growth" based on productivity gains--were frustrated, however, by a relatively backward technological base, inflexible production processes, and, perhaps most important, a cumbersome and inefficient system of planning and management and a distorted structure of incentives.

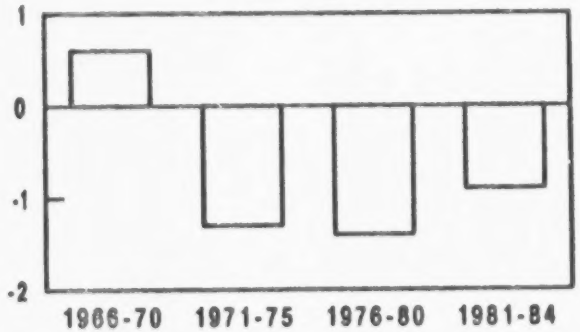
Figure 1

USSR: Key Economic Indicators When Gorbachev Took Over
(Average Annual Percentage Growth)

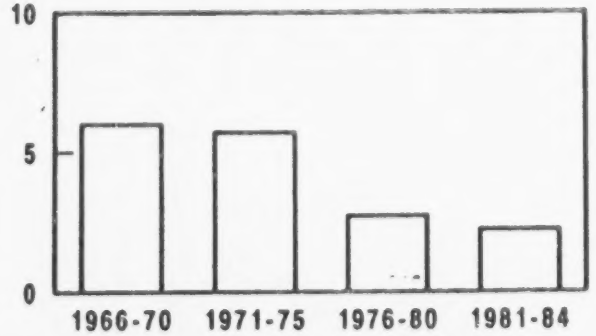
GNP



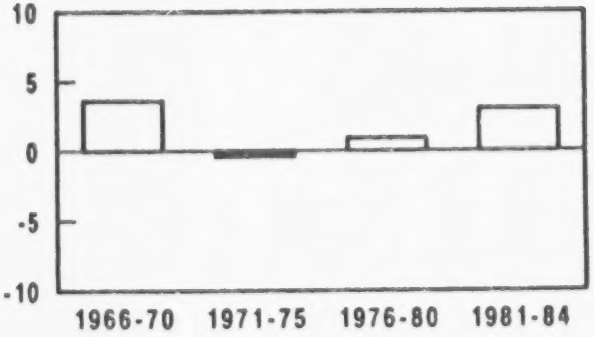
Factor Productivity *



Industrial Output



Agricultural Output **



* Factor productivity measures the difference between the growth of gross national product and the growth of a weighted sum of inputs of land, labor, and capital.

** Growth was calculated using net agricultural output, which excludes intra-agricultural use of farm products but does not make an adjustment for purchases by agriculture from other sectors.

Moreover, the leadership's inability to stimulate higher economic growth had contributed to a growing malaise among a substantial and growing share of the population by the end of the Brezhnev era, not only because gains in living standards had slowed but also because of an apparent belief that the system was incapable of bringing about any meaningful improvement. This attitude--reflected in the rise in alcoholism and health-related problems--exacerbated the corruption and inefficiency that had permeated the Soviet economic structure--from farmhand to factory worker to the ministerial bureaucracy. Workers and managers alike spent increasing amounts of time and effort trying to insulate themselves--often through illegal means--from the effects of shortages in both the home and factory. This reduced productivity on the job and aggravated shortages of goods and services throughout the economy, especially for individuals and enterprises with little or no "special access."

Meanwhile, Gorbachev took charge of a powerful military--one that had been built up through a massive commitment of the nation's best resources over the past two decades and one that had been used increasingly to achieve political goals. During 1965-75, for example, Soviet military expenditures grew in constant rubles by nearly 50 percent (see Box Inset). Growth slowed in the mid-1970s, but the Soviets sustained spending at very high levels, enabling them to procure massive quantities of military hardware. As a result, the share of GNP devoted to the military increased in current ruble prices from about 12 to 14 percent in the early 1970s to around 15 to 17 percent in the early 1980s as the growth of military spending during this period continued to exceed that of the overall economy.

Box Inset

Dollars and Rubles

The CIA estimates the annual value of Soviet defense activities in both constant ruble prices and constant dollar prices:

-- The dollar valuation is used to measure how annual Soviet defense activities compare in size with similar US activities.

-- The ruble valuation is used to measure the impact of Soviet defense spending on the country's economy.

In comparing the Soviet defense effort with that of the United States, a common set of prices is needed. Military goods and services procured by the USSR are valued in dollar prices. Either dollars or rubles could be used, but dollar prices are used because they are most familiar to US defense planners and policymakers and because of the difficulty of estimating ruble prices for US defense activities--especially the cost of producing US weapons in Soviet manufacturing plants. These estimates can then be compared with US defense budget outlays for a comparable set of activities over the same period of time.

The impact of Soviet defense spending on the economy must be measured in rubles. Our ruble calculation provides an estimate of the level of, and the trend in, the annual Soviet resource commitment to military forces. This estimate is used to assess the impact of defense programs on the Soviet economy and, conversely, the impact of economic factors on Soviet defense activities. The estimate permits insights into the resource constraints confronting Soviet planners and the priorities they assign to the elements of their defense effort.

End of Box Inset

Soviet gains in the strategic area were especially large. Over the last decade, Soviet strategic forces received roughly 3,500 ICBMs and SLBMs, three times as much as the United States procured. Similar sweeping improvements occurred in Soviet conventional forces where the USSR added large numbers of more sophisticated fighters, bombers, and tanks. In addition, throughout this period, Soviet defense industries, whose capacity expanded rapidly, produced an increasing amount of military hardware for delivery to other countries, particularly in the Third World, in an effort to both gain political influence and also to increase hard currency earnings. (Table 1 compares procurement of selected military hardware by US and Soviet military forces, and Table 2 presents estimates of the value of Soviet military exports during 1974-85.)

Despite the priority given to the military in resource allocation, the defense sector was not totally immune to the effects of economic problems. Resources devoted to military-related research and development continued to grow at a healthy 4 to 5 percent per year, but growth of military procurement dropped markedly and held overall defense growth (measured in dollars) to about 2 percent per year during the 1974-85 period--about half the rate of the previous decade. Both CIA and DIA agree that a slowdown in defense procurement occurred during this period, although the Agencies differ somewhat on procurement trends in recent years (see Box Inset).

In short, Gorbachev's predecessors left him with powerful military forces and a large but troubled economy. One of his primary challenges as General Secretary was, therefore, to find the resources to accelerate economic growth while sustaining the military gains of the past 20 years. Indeed, Gorbachev probably was selected as General Secretary in part because of the belief among certain of the elite that he was the best man to bring about a resurgence of

Table 1

US and USSR: Procurement of Selected Weapons Systems, 1974-85[a]

	US	USSR
ICBMs and SLBMs	1,050	3,500
Surface-to-air missiles[b]	11,700	105,000
Long and intermediate range bombers	8	400
Fighters	4,050	7,800
Helicopters	2,050	6,500
Submarines	44	110
Major surface combatants	98	90
Tanks	8,400	27,000
Artillery	2,200	22,000

a These numbers represent gross additions to weapons inventories and do not reflect retirements because of obsolescence or SALT restraints.

b Does not include naval or portable SAMs.

Table 2

USSR: Estimated Value of Military Deliveries, 1974-85
(billion US dollars)

Recipient	1974-79	1980-85	1974-85
Six Warsaw Pact countries	8.7	9.8	18.5
Syria	4.5	10.3	14.8
Iraq	6.0	8.2	14.2
Libya	5.4	5.8	11.2
Vietnam	2.1	4.9	7.0
India	2.0	4.8	6.8
Algeria	1.6	3.6	5.2
Cuba	1.3	3.9	5.2
Ethiopia	1.5	2.6	4.1
Angola	0.7	2.8	3.5
60 other countries	7.7	11.3	19.0
Total	41.5	68.0	109.5

Box Inset

CIA-DIA Dollar Cost Estimates of Soviet Defense Procurement

CIA and DIA dollar cost estimates of Soviet defense procurement are derived from estimates of weapon systems production. As a result of an extensive 1985 review of such estimates, past differences between CIA and DIA have been narrowed greatly. Both Agencies agree on estimates for more than 200 of the 250 weapons systems examined. Both Agencies also agree that between 1975 and 1981 the dollar cost of weapons procurement increased at a rate of roughly 1 percent per year.

Some differences still exist, however, on the growth of procurement in recent years. After several years of stability, DIA estimates that, in the 1982-84 period, major weapons procurement increased at about 3 to 4 percent per year. In contrast, CIA believes that defense procurement was essentially flat during this period.

It should be pointed out that the DIA's methodology differs somewhat from CIA's, and therefore the results are not directly comparable. DIA concentrates on estimating the year-to-year changes in the costs of major weapons procurement, which includes approximately 350 weapon systems. CIA estimates total procurement, which encompasses such additional categories and components as organizational equipment and some weapons systems not costed by DIA (e.g., missile launchers and air-to-air missiles). As a result, the DIA estimate--in value terms--is about 70 percent of CIA's total procurement.

In addition to this difference in coverage, DIA and CIA do have different estimates for the production of some weapons systems, and some methodological differences in arriving at unit costs still remain.

End of Box Inset

broad-based economic growth and to push through an effective program of industrial modernization.

Gorbachev's Strategy

Gorbachev has, in fact, made it clear almost since the day he became General Secretary that revitalization of the economy is a top priority. Gorbachev has acknowledged that without improved economic performance the USSR would have trouble simultaneously meeting requirements for defense, boosting consumer welfare sufficiently to improve labor productivity, and modernizing the economy. In particular, without a major renovation of the country's industrial base, the new General Secretary probably realized that the USSR would continue to trail technologically in some areas vital to the military. In recent years, Soviet military authorities (including Marshal Ogarkov) have gone on record saying that, without major improvements throughout the economy, the USSR's military capabilities would continue to lag the West's technically in many areas, and Soviet forces would face increased difficulties in meeting the military requirements of the 1990s.

In laying out his economic program, Gorbachev has focused his efforts squarely on increasing efficiency. To this end, he has essentially adopted a two-step approach. Initially, Gorbachev is relying on a combination of measures to strengthen party discipline, improve worker attitudes, and weed out incompetents--what he refers to as the "human factor." Over the longer term, Gorbachev is counting on achieving major productivity gains as a result of a series of organizational changes, reform initiatives, and, most importantly, an extremely ambitious campaign to modernize the country's stock of plant and equipment.

Addressing the Human Factor

Gorbachev's first and most accessible target in his campaign to boost productivity has been his campaigns for discipline and against corruption and alcoholism. These efforts--like those pushed less vigorously by Andropov--have received widespread public support and yielded positive results. According to Soviet figures, purchases of alcohol at state stores declined 25 percent during the second half of 1985 compared with those of the last six months of 1984. Soviet press statements indicate that, as a result, there has been a marked decrease in absenteeism, fewer industrial accidents, and increased productivity overall.

At the same time, Gorbachev has removed an unprecedented number of senior economic managers (see Figure 2). Since taking over, he has replaced the Chairman of the Council of Ministers and five deputy premiers with officials more beholden to him. He has also removed the Central Committee department chiefs who oversee the machine-building, construction, and trade and service sectors, while replacing 25 of the country's economic ministers and state committee chairmen. Some of the replacements have backgrounds in defense industries, reflecting Gorbachev's willingness to draw upon talented officials in that sector to improve management of the civilian economy.

In contrast to his personnel moves, Gorbachev has moved much more cautiously on the organizational front, eschewing a sudden sweeping overhaul in favor of a more selective approach in an apparent effort to reduce economic dislocation and political infighting. Since mid-October, he has established new bureaus to oversee the machine building and energy industries and has embarked upon a major reorganization of the agro-industrial bureaucracy. Similarly, while avoiding any major reform initiatives and expressing a preference for working within the system, Gorbachev has voiced support for

Figure 2

MAJOR PERSONNEL CHANGES UNDER GORBACHEV

- Three Politburo opponents removed; five allies appointed.
- Chairman of the Council of Ministers retired; some 25 economic ministers and state committee chairman replaced.
- Eight Central Committee Department Chiefs removed --- including five responsible for economic affairs.

giving greater operational independence to enterprise managers and workers through expansion of such programs as the "Five-Ministry Experiment." Begun in January 1984, this experiment is supposed to give enterprises greater control over investment and wage funds and to make fulfillment of contractual sales obligations the prime indicator for evaluating enterprise performance.

Industrial Modernization

Without downplaying the importance of his personnel and organizational changes, Gorbachev has made it clear, however, that his call for accelerated productivity growth depends ultimately on fundamental improvements in the country's production base, or, in his words, on nothing less than "the structural transformation of the economy." According to one unofficial Soviet estimate, the stock of machinery and equipment is 20 years old on average. In laying out his program last summer and fall, Gorbachev proposed:

-- Doubling retirement rates of capital stock to accelerate the replacement of obsolete capital by more efficient, largely state-of-the-art machinery.

-- Modernizing the nation's capital stock so that by 1990 a third of it, including up to half the machinery portion, is new.

-- Increasing capital investment in civilian machine building in 1986-90 by 80 percent over that of 1981-85.

The qualitative side of Gorbachev's modernization strategy has emphasized the development of those industries that provide the advanced equipment for industrial modernization.

1985: A Year of Transition

As Gorbachev was putting forward his blueprint for reviving the economy during the latter part of the 1980s, the Soviet economy was turning in another lackluster performance. Shrinking farm output held GNP growth in 1985 to

about 1 1/2 percent for the second straight year. Meanwhile, non-farm output rose by about 2 1/2 percent last year. Industrial output increased by nearly 3 percent, a figure about equal to the 1983-84 pace as the tabulation below shows. (See Appendix B for a description of Soviet performance by sector.)

USSR: Growth in GNP by Sector of Origin[a]

Percent

	Average Annual 1981-85	1981	1982	1983	1984	1985[b]
GNP	2.2	1.7	2.7	3.5	1.5	1.6
Agriculture[c]	2.2	-0.5	6.2	6.8	-0.5	-0.6
Other Sectors (including industry)	2.3	2.4	1.6	2.5	2.4	2.6
Industry	2.3	1.6	1.4	2.9	2.9	2.8

a Calculated in 1982 rubles at factor cost.
b Preliminary.
c This measure for agricultural output excludes intra-agricultural use of farm products but does not make an adjustment for purchases by agriculture from other sectors. Value added in agriculture grew by an average of -1.5 percent in 1981, 7.4 percent in 1982, 7.4 percent in 1983, -1.7 percent in 1984, -2.1 percent in 1985, and at an annual average rate of 1.8 percent for the period 1981-85 as a whole.

Despite the relatively slow growth in the economy overall, Gorbachev could take some satisfaction from the 1985 results. Through a combination of factors, a year that started out very badly turned into one that was at least respectable. Certainly, improved weather after the first quarter eased pressures throughout the economy. But a similar situation during 1981--when harsh weather also disrupted production--did not result in nearly the same turnaround. (See Box Inset on Gorbachev's impact on the economy's performance in 1985.)

Although Gorbachev probably deserves some credit for the economy's showing in the last half of 1985, the programs and decisions involving

Box Inset

Did Gorbachev Make a Difference in 1985?

At the recently concluded 27th Party Congress, party leaders hailed Gorbachev for the economy's improved performance since he took over last March. On the surface, their praise seems justified. After a miserable first quarter last year, non-farm output rebounded stongly. Industry, in particular, has done well and by the last quarter of 1985 was growing at close to 3.5 percent per year.

Much of the rebound is attributable to improved weather during the last three quarters of the year. Last year's winter was the coldest in 20 years. Rail freight traffic fell sharply, apparently causing shortages of raw materials throughout industry. As the weather improved, these problems disappeared. Another factor in the rebound was the "postponement" of two holidays during the second half of 1985. As a result, there were two more work days during the last six months of 1985 than in the same period in 1984.

Nevertheless, Gorbachev's vigorous campaigns to increase worker discipline and cut alcohol abuse probably paid some dividends. At an April plenum just after taking office, Gorbachev issued an urgent call for better economic performance. While acknowledging the severe winter weather, he blamed the lack of discipline and passive management for the poor first quarter results and told workers and managers, in effect, to shape up or "move aside." His firing of one-third of the industrial ministers during the year--mostly in sectors that had been doing poorly showed that he--unlike Brezhnev--was willing to follow through on his criticisms of industrial leaders.

End of Box Inset

resource allocation resulted from policies that predate his selection as General Secretary. During 1985, for example, growth in investment was 2.7 percent, up from the 1.9 percent rate in 1984, but far below the rate necessary to carry out Gorbachev's modernization program. Probably because of harsh winter weather that delayed many construction projects, investment grew faster in the second half of the year. Even when the weather improved, however, problems in bringing new production facilities on line continued. New capacity commissioned in 1985 was valued at only 0.7 percent more than the capacity brought on stream in 1984, despite repeated calls by Gorbachev and other top officials to cut back on unfinished construction during the year.

Similarly, whatever Gorbachev's intentions regarding increasing the availability of consumer goods as a spur to labor productivity, such a policy was not evident during 1985. In particular, shortages of sought-after goods and services continued, limiting growth of per capita consumption to less than 1 percent, half the rate achieved in 1984. Supplies of some quality food--e.g., meat--showed little increase over 1984 levels. As a result, queues continued to be widespread, and rationing continued in some areas in 1985.

While we have a fairly good sense of consumption and investment trends in 1985, our information on Soviet defense spending is much less solid and we have not settled on an estimate for last year. What is certain is that the Soviets continued the broad based modernization of their military forces during 1985. They augmented their strategic nuclear strike capability by beginning to deploy new bases for the new mobile SS-25 ICBM. At the same time, they added new units of both the Typhoon and Delta IV Classes of ballistic missile submarines.

Soviet general purpose forces modernization also continued apace, with many of the programs--especially those in the ground forces--apparently intended to make Soviet forces more capable of extended operations. As part

of this effort, for example, Moscow continued to field new tanks, an improved tracked infantry vehicle, and a new wheeled armored personnel carrier. Meanwhile, Soviet air force units received their initial complement of SU-27 Flanker fighters, as well as other aircraft already in serial production. Finally, the Soviets continued their commitment to a blue water navy with the addition of a new Oscar Class cruise missile submarine and the fitting out of both the fourth Kiev Class aircraft carrier and a new large aircraft carrier.

The 1986-90 Plan:

Ambitious Targets

Whatever the economy's shortcomings in 1985, Gorbachev has made it clear that he expects much better results during the next FYP. The draft economic guidelines for 1986-90 that were issued in early November set ambitious targets. GNP is slated to grow at roughly 3 1/2 percent per year in 1986-90 and by about 5 percent per year in 1991-2000, rates not achieved in more than a decade.* Among the major sectors, agricultural output is planned to increase by about 3 percent per year, a substantial improvement over the 1981-85 results. Meanwhile, in line with Gorbachev's strategy, industrial output is scheduled to grow by a respectable 4 1/2 percent per year, led by a 7-to-8 percent annual increase in production of the machine-building sector. Within machine building, special emphasis is to be given to the machine tool, computer, instrument making, electrical equipment, and electronics industries--the same sectors that have paced modernization efforts in the West. Production in these industries, identified by military leaders as being

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* The Soviets do not set a target for GNP, which is a Western concept. Rather they use a Marxist concept of national income which excludes depreciation, as well as most wages in services. To convert their national income target to a GNP goal, we add an estimate for growth of most service sectors.

the key to modernization of the defense industrial sector, is to grow about 1 1/2 times as fast as machine building output as a whole.

Despite these impressive goals, the guidelines allow for only moderate increases in factor inputs. In line with demographic trends, little growth is anticipated in the labor force. What appears incongruous, however, is that total investment is slated to rise by only about 3 1/2 to 4 percent per year. Although somewhat above the rate of recent years, the investment target is insufficient to meet Gorbachev's stated goals for increasing investment in the machinery sector, while satisfying the needs of other critical sectors such as energy, transportation, and ferrous metallurgy.

The reason for the low investment target is unclear. The fact that Gorbachev remanded the draft guidelines repeatedly before they were issued and that no investment data other than an overall growth target appeared suggests that the issue of resource allocation was a difficult one. Moderate investment growth appears inconsistent with a radical modernization of the economy.

Dependence on Unrealistic Conservation and Productivity Goals

To make the plan balance--given the low investment figure--the guidelines for 1986-90 call for sharp increases in productivity and substantial energy and raw material savings. The guidelines exhort managers and workers to save industrial materials and fuels--an old theme. The leadership's problem is that in the short term there are few opportunities for quick savings that have not already been exhausted. While substantial savings could be realized by the use of more efficient equipment, its development--a high priority of the Gorbachev regime--is difficult and time consuming.

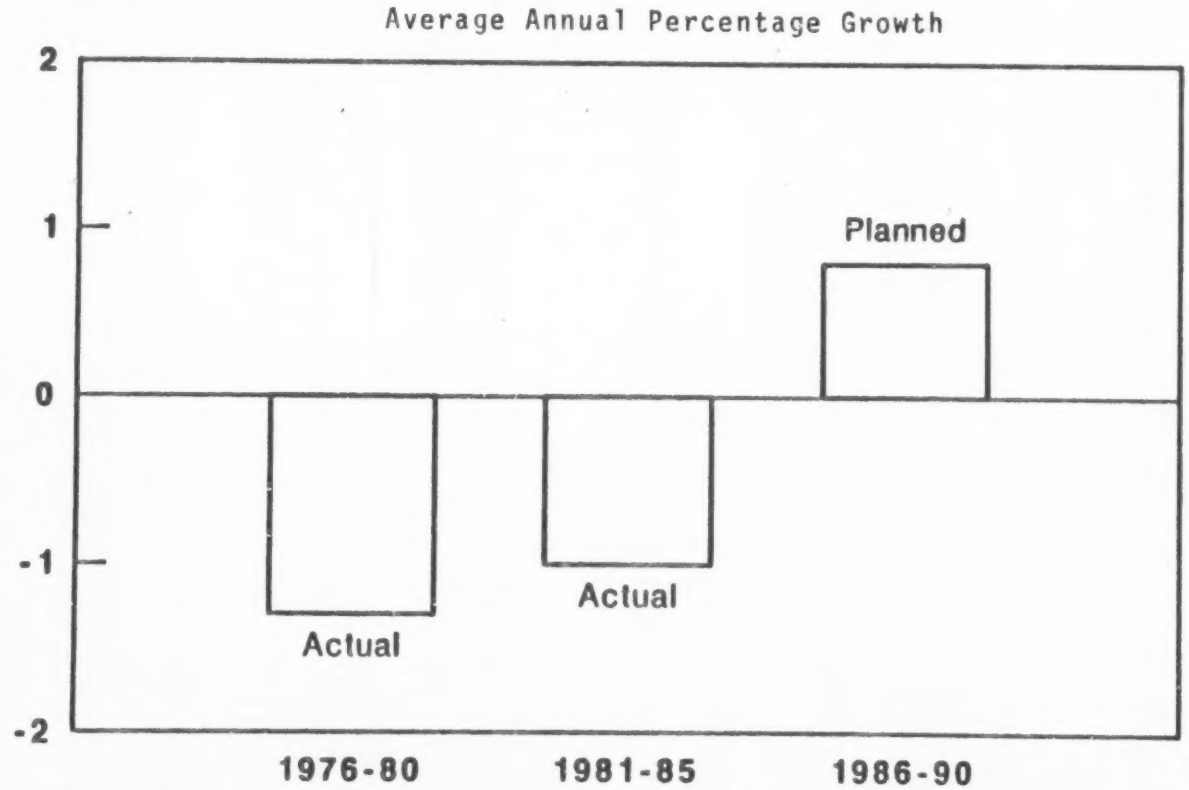
At the same time, to help bridge the gap between planned output and factor inputs, substantial real growth in productivity is planned. Success in meeting this goal would stand in sharp contrast with the past two FYPs, when productivity actually declined (see Figure 3). To this end, the leadership is apparently banking on greater worker effort prompted by increased availability of consumer goods and services. For example, the 12th FYP largely repeats the targets of the Food Program--first advanced by Brezhnev in 1982--including a goal for boosting per capita meat production by 17 percent over the next five years.

As a further incentive to the workers, the Politburo also approved a Consumer Goods and Services Program last fall that lays down impressive goals for improving the quality and quantity of nonfood consumer goods and services. Both are to grow at annual rates roughly double the average annual rates achieved during the 1981-85 period. While less ambitious than those proposed by Khrushchev in the 1961 Party Program, they seem unrealistic in light of recent trends and the apparent lack of any substantial increase in planned investment growth in these areas during 1986-90. No investment figures for these areas were given in the guidelines, but Gorbachev's emphasis on focusing investment resources on sectors related to industrial modernization would seem to preclude a large shift of resources in favor of the consumer.

Even if the Soviets were to achieve all the targets set forth in the Food and Consumer Goods and Services Programs, it is still unlikely that they would be translated into sizable productivity increases--no matter how much greater effort the workforce put forth--unless they were also able to meet their plans for producing new machinery and equipment. Indeed, this point was made by

Figure 3

USSR: Growth in Factor Productivity, 1976-90[a]



a. Factor productivity measures the difference between the growth of Gross National Product and the growth of a weighted sum of inputs of land, labor, and capital.

Nikolay Ryzhkov, the new Chairman of the Council of Ministers, in his speech to the 27th Party Congress. He said that assimilation of new machinery would account for more than two-thirds of the planned increase in labor productivity in the country.

The 1986 Plan: Emphasis on Modernization

Whatever the reason for the low investment target in the 1986-90 guidelines, and the need to set unrealistic conservation and productivity goals as a result, support for the investment program was back on center stage by the time the 1986 annual plan was issued. The 1986 growth target for new fixed investment is 7 1/2 percent--at least twice the average annual growth target for the 1986-90 period as a whole. Within the total, investment in civilian machinery is slated to grow a whopping 30 percent. Moreover, in apparent contrast with Gorbachev's previous statements that the share of investment in energy would be held constant during the FYP, investment in oil extraction is slated to rise by 31 percent, in the coal sector by 27 percent, and in the electric power sector by 24 percent. Similarly, agriculture's investment share apparently will be held nearly constant in 1986, rather than decreasing as had been suggested earlier.

Although the 1986 plan calls for rapid growth in investment, the machinery sector will be hard put to meet the demands placed on it for investment goods, while at the same time meeting the requirements for consumer durables output and military procurement--the other two major claimants on the sector's output. The Soviets probably could increase the supply of new capital somewhat without increasing domestic production of investment resources by reducing the stock of uninstalled equipment and the backlog of unfinished construction. Success in accelerating capital assimilation would give a one-shot boost toward meeting equipment modernization goals. For

example, pronounced success in reducing the stock of uninstalled equipment might free 2-3 billion rubles of new machinery. Once the additional stocks have been mobilized, however, inventory drawdowns are no longer a source of additional machinery.

Some increase in machinery imports is also certain in 1986. The plan guidelines for 1986-90 make it clear that the leadership expects substantial help from Eastern Europe. They emphasize increasing economic integration within CEMA, and Gorbachev's appointments of Boris Aristov and Nikolay Talyzin--both with extensive experience in East European affairs--as Foreign Trade Minister and Chairman of the State Planning Committee, respectively, could help in this regard. Moreover, the USSR may also be looking to the West for increased machinery imports, especially in key areas such as energy, advanced machine tools, and ferrous metallurgy. But while potentially helpful in 1986, the absolute gains over the longer term probably will not be large because of (a) the lead times involved in contract negotiations with Western suppliers, (b) the deterioration in the USSR's hard currency position, and (c) the reluctance of Eastern Europe to provide more and better machinery.

In sum, the 1986 annual plan appears designed to give a powerful boost to modernization. The question still open is whether this commitment will be sustained throughout the five-year period or whether the Soviets will stick to the investment target in the draft guidelines. Indeed, if investment grows at 7 1/2 percent in 1986 as planned, investment would have to grow at only 2 1/2 to 3 percent per annum during 1987-90 to meet the FYP target. A cutback to these levels in the late 1980s is unlikely, however. Investment rising at this rate would not support industrial modernization on the scale Gorbachev has been talking about. Moreover, Gorbachev probably would not slow the investment momentum in 1987-90 if he comes close to meeting his 1986 target.

Implications for Defense

Gorbachev's plan for refurbishing the country's industrial base through the massive replacement of machinery and equipment will certainly involve increased demands for many of the resources used in the production of weapons. We do not know how far Gorbachev will go in emphasizing modernization of civil industry as opposed to defense industry. We do have evidence, however, that the Soviets are aware of the heavy resource constraints the military burden places on the modernization program.

Many Soviet military leaders appear to realize, however, that the military will be the ultimate beneficiary of successful industrial modernization and have voiced their support for it. Soviet military authors are aware that economic improvements will ease resource constraints and accelerate the introduction of new technology, thus setting the stage for more rapid military modernization in the 1990s. In particular, weapons to be introduced in the mid-1990s will use more sophisticated guidance, sensor, computer, and communication subsystems, which in turn will require advanced microelectronics, design, fabrication, and testing capabilities. An example of the military perspective was contained in an article in the October 1985 issue of Kommunist vooruzhennykh sil by Major General Vasykov who identified "fundamentally new instruments, computer-controlled machine-tools, robot equipment, and the latest generation computers," as "the leading directions of scientific-technical progress and simultaneously the basic catalysts of military-technical progress."

To the extent the Soviets have difficulty finding the resources to meet Gorbachev's industrial modernization goals and satisfy military requirements in the near term, the problem will be centered in the machinery sector--which traditionally has allocated a large portion of its output to the military.

The increased demands for resources needed for these programs will be centered around several areas:

-- Factory Capacity. Implicit in Gorbachev's call for increased output of advanced machinery is the competition--in the absence of rapid plant expansion--for modern workspace at production facilities. In this connection, robots, computer-numerically-controlled machine tools, computer-aided design systems, flexible manufacturing systems, and other highly automated manufacturing systems are important for the production of both advanced manufacturing equipment needed for boosting industrial productivity and for producing sophisticated weapon systems.

-- Basic Materials. Chemicals and metals are used in producing both weapons and advanced machinery. The ferrous metals ministry, for example, has failed to meet its targets for many types of steel in recent years.

-- Intermediate Products. Engineering plastics, advanced composite materials, electronic components, and microprocessors are currently in high demand in the defense industry and, as modernization proceeds, will be needed increasingly by civil industry as well. These products, however, are in short supply.

-- Labor. Both the defense industry and modern civil industry require highly skilled workers, particularly computer technicians and software engineers.

Factory Capacity Available

The near-term competition for factory floorspace and investment goods has been mitigated by the substantial expansion and upgrading of defense-industrial plants over the past decade. Comprehensive programs to modernize many weapons production facilities began in the early 1970s. Efforts to modernize defense industry accelerated in the late 1970s, and we believe a large portion of the best domestically produced machinery was delivered to defense industry during this period. In addition, the defense sector was helped by a surge in clandestine and open acquisition of Western manufacturing equipment.

As a result of this investment in defense industry, almost all of the production capacity required to support Soviet force modernization over the next six years or so is already in place. Our calculations suggest that

virtually no additional investment in the plant and equipment is needed to manufacture the military hardware that we believe will be in production in 1986-88 and that most of the capacity required to turn out the military equipment projected to be in production in the early 1990s is already available. Moreover, weapons development and industrial construction indicate that investment in defense industies will continue at a high level, adding new capacity with greater capabilities. Thus, military production would not be constrained in the near term by a reallocation of new fixed investment in favor of civilian machinery and other priority sectors.

Materials, Intermediate Goods, and Labor

Although the Soviets have the production capacity to maintain or even increase the current level of weapons production, competition for labor and material inputs used in the production process could force some trade-offs at the margin between military and civilian production. The nature of this competition is shown in Figure 4, which summarizes our judgments on (a) the degree of need for the particular resource in civilian machinery, (b) its availability in non-machinery sectors of the economy, and (c) how easy it would be to shift the resource from military defense industry to civilian machinery.

High-quality steel and energy, for example, will be in great demand to manufacture machines needed for both industrial modernization and weapons production. The high targets the Soviets have set for machinery production will place tremendous demands on the ferrous metals branch. This industry, however, has been doing poorly in recent years and apparently will receive little, if any, increase in investment during the 1986-90 FYP. Although there is likely to be some growth in the energy sector, the energy situation may be tight.

Figure 4

USSR: Military-Civil Competition for Resources

Resource	Need In Civilian MBMW Sector for Modernization	Availability of Outside Of MBMW Sector	Transferability from Military to Civilain MBMW	Comment
Materials				
Basic/Raw:				
Energy	Medium	High	High	
Intermediate:				
Chemical feed stock	High	Medium	Med-High	
Engineering fibers	High	Low-Med	High	
Micro-electronics	High	Low	High	In very short supply in both sectors.
Specialty steel	Med-High	High	Med-High	
Aluminum	Med-High	High	High	
Titanium	Medium	Medium	Medium	
Construction materials	Medium	High	High	
Intermediate Products				
Conventional:				
Electric motors	Med-High	Low	Med-High	
Diesel engines	Med-High	Low	Med-High	
Advanced:				
Engineering plastics	High	Low-Med	High	
Micro-processors	High	Low-Med	High	
Composites	Medium	Low-Med	Medium	
Micro-electronic components	High	Low	Medium	In short supply.
Manpower				
Skilled:				
Computer programers	High	Low-Med	High	Shortage exists throughout economy.
Electronics technicians	High	Low-Med	High	
Software engineers	High	Low-Med	High	
Researchers	Med-High	Med-High	Medium	
Machinists	Medium	Low-Med	High	
Industrial engineers	Medium	Low-Med	High	
Unskilled:				
Laborers	Low-Med	High	High	

The competition for human resources could be even more intense. Extensive underemployment exists in the Soviet economy, and Gorbachev may hope that he can support his modernization program by mobilizing currently underemployed engineers and labor. But shortages persist in the USSR in several skill areas critical to both defense and modernization--for example, systems analysts and, to a lesser degree, computer programmers and selected types of engineers and skilled machinists. The most likely immediate source of additional specialists for civil machine building is a reallocation of the employees already working in the machinery sector.

Capitalizing on Sunk Costs

In view of the massive investment already made in defense plant capacity and the powerful precedents of military priority, we believe that the Soviets will move ahead with most of the military modernization that the Intelligence Community has projected through the end of the decade. As noted, nearly all of the major systems expected to be delivered to the forces in the next several years already are being built on fully equipped final assembly lines. The Blackjack bomber, the SU-27 fighter, the SS-25 ICBM, and the T-80 tank, for example, have all entered production, and although the SS-X-24 is not yet in production, the necessary capacity is ready and the production machinery is probably installed.

The demands for basic materials, intermediate goods, and skilled labor to meet Gorbachev's industrial modernization goals, however, might cause the pace of production of some of these new systems to be somewhat slower and the date of introduction somewhat later than would otherwise be the case. Even allowing for such delays, however, the USSR can proceed with its strategic and general purpose programs over the next several years--whether the annual rate

of procurement spending grows a little or even declines. For example, Table 3 compares 1981-85 production of major weapon systems with representative levels of production of the same systems that are feasible over the next five years if procurement spending grows at an average annual rate of less than one percent. The specific mix of weapons may be somewhat different--some higher, some lower. Nonetheless, taking into account the sunk costs and the momentum of ongoing programs, we believe these figures reflect the general level of procurement that will occur during the 1986-90 period.

At these general levels of production, improvements to Soviet strategic forces will be substantial. New generations of land and sea-based ballistic and cruise missiles recently have entered or will soon enter production. As a result, a comprehensive modernization of the USSR's strategic offensive forces should be completed by the early 1990s. Strategic defense force improvements, although less substantial, also will permit sustained improvements in capabilities.

Conventional forces will undergo a similar upgrade. Two late generation fighters, the MIG-29 and SU-27, are entering the inventory, while new submarines and warships--including the USSR's first full-sized aircraft carrier--are improving naval capabilities. Meanwhile, a variety of improved land arms (most notably new artillery weapons and the T-80 tank) are being deployed to the ground forces.

The Politics of Modernization

Thus, Gorbachev can "coast" for a few years on the strength of the USSR's past investment in its military industrial complex, which will permit the continued modernization of the USSR's strategic and conventional forces. As already noted, the military appears to suppot Gorbachev's basic program--both

Table 3

USSR: Procurement of Selected Weapon Classes

Weapon Class	Estimated 1981-85	Possible 1986-90[a]
ICBMs/SLBMs	800	700[b]
Submarines	40	50
Tanks	12,500	18,000
Fighter Aircraft	2,400	2,000[b]
Helicopters	2,500	2,100[b]
Strategic Bombers	200	210

[a] See text for explanation of the 1986-90 projections.

[b] Although our projections suggest lower overall numbers in these categories, the missiles, fighters, and helicopters the Soviets will procure during 1986-90 are more complex, capable, and costly than those purchased during 1981-85.

because it will allow for the modernization of strategic forces and because of its long-term promise of more advanced weapons. The extensive top level leadership changes and the formal endorsement of the Party Congress put Gorbachev in a good position to move ahead with implementation of his programs for change. His preoccupation now will be with lower level elements of the entrenched bureaucracy--that is, how to get them to implement his policies.

Nevertheless, over the longer term, the political risks for Gorbachev are likely to mount as the demand for new investment for defense plant and production equipment rises in the late 1980s and early 1990s, when the Soviets will have to begin tooling up for the next generation of weapons. Unless Gorbachev's efforts to modernize industry pay off in greater numbers of more advanced, high quality equipment and in substantially increased productivity, Gorbachev will need to reconsider his overall economic strategy. Over the next few years, the defense industries will be expected to do more with the resources they have as they satisfy continuing defense requirements. In the late 1980s, however, decisions will have to be made regarding the building of new capacity to produce the major new weapons of the 1990s. At that juncture, shortfalls in industrial modernization and technological advance could increase pressures to postpone certain major defense initiatives--a development that would be unpalatable to the military and some political leaders.

Future Decision Points

Short-Term Economic Prospects

Gorbachev's political fortunes ultimately will depend on maintaining his political support within the Party. If Gorbachev is not able to reverse the downward trend in economic growth, his support will be greatly weakened. In the short run, at least, prospects for at least some success in reviving the

economy are promising. In 1985, industry rebounded from a very poor start to register respectable growth. As noted earlier, much credit is due to better weather, but Gorbachev's initiatives may also have had a positive impact which should carry forward in 1986 and beyond.

Some modest improvements in economic performance also could show up when the "Five-Ministry Experiment"--the limited expansion of the operational decisionmaking authority of plant directors under way since 1984--is extended industrywide next year. Positive results depend, however, on preventing the economic ministries from encroaching on the authority of industrial firms and--at the same time--assuring that enterprise managers do not use their increased powers in ways that are inconsistent with national economic goals. Historically, these have been elusive objectives, and, even as emended by Gorbachev, the Five-Ministry Experiment has not introduced changes in economic incentives that are likely to result in significant progress toward them.

Gorbachev's program should also benefit somewhat from the upturn in machinery production that began in 1983. After averaging annual gains of about 1 ½ percent during 1981-82, machinery output has picked up to an annual rate of more than 3 ½ percent. The 30-percent rise in investment in the machinery sector planned for this year will help future growth.

Long-Term Uncertainty

How much economic improvement can be expected, and how long it can be sustained, however, is very much an open question. Although personnel changes, reorganization of the planning and management apparatus, and increased discipline may boost labor productivity for a few years, we believe they cannot by themselves sustain growth indefinitely. The key to success will be Gorbachev's ability to cope with some fundamental problems:

-- Improving management efficiency and worker morale will require an effective incentive system and a better supply of consumer goods at a time when the investment sector will be oriented toward producer goods. Investment in some consumer sectors has apparently received short shrift, risking consumer discontent that will counter efforts to raise productivity.

-- The greater managerial independence necessary for effective technological development and resource use is inconsistent with a centrally planned pricing and allocation system.

-- Industrial modernization is a process best served by slack in the economy that give plants the time to retool and learn how to use new equipment. Gorbachev's emphasis on immediate acceleration of GNP growth means a continued priority on current output--the major source of the traditional reluctance of enterprise managers to introduce new technology.

Thus, Gorbachev could be taking a considerable risk in implementing his modernization program. If he tries to carry it out without raising the overall investment rate for 1986-90, the impetus to growth based on the 1986 plan is likely to trail off after a few years, leaving the shortages and disproportions characteristic of an unbalanced plan. Shortchanging the energy sector after this year, particularly oil, could result in a further sharp decline in oil production. Already last year, falling oil prices and a decline in sales to the West led to a $3.5-billion drop in hard currency earnings. An erosion of the same magnitude is possible this year. To offset some of this loss, Moscow will probably try to push arms sales, but lower oil prices have resulted in a weak demand from major Middle Eastern customers.

Hard currency arms exports fell about 30 percent in 1985 and could fall again this year. Moreover, unless the USSR is willing to underwrite Western imports through massive borrowing--which seems unlikely--Moscow may be forced to reduce imports of state-of-the-art technology.

To maintain or restore the momentum to his modernization program, Gorbachev could decide to step up investment toward the end of the 12th FYP by trying to curb the military's demand for machine-building output and R&D resources. The military obviously might become restless under such a scenario while waiting for the deferred improvements in the technological base of military industry. Alternatively, Gorbachev could find machinery for the modernization program by curtailing the resources committed to consumer durables production or the Food Program or by leaning more heavily on Eastern Europe. Scaling down resources for the consumer might be especially attractive if better than average weather over the next few years resulted in unexpected gains in agricultural output. In the absence of such an upturn, however, Gorbachev's plans to increase work effort would probably founder as general disillusion set in, with the population seeing Gorbachev as no more effective than Brezhnev or Chernenko.

Rather than direct more resources to investment, Gorbachev might seek to promote productivity through organizational reforms. He could, for example, permit some legalization of private-sector activity, particularly in consumer services. This would indicate willingness to overturn past economic orthodoxy in order to improve consumer welfare and, thereby, economic performance. Although Gorbachev has taken a conservative approach to reform measures so far--preferring to work within the system--he may be willing to introduce bolder measures once his political support has solidified.

In sum, major adjustments probably will have to be made in Soviet economic policies if Gorbachev hopes to achieve his economic objectives, although at this stage it is too early to tell just what he will do. The one thing that appears certain is that the new General Secretary remains committed to his industrial modernization program. Indeed, at the recently concluded 27th Party Congress, Council of Ministers Chairman Ryzhkov, in his keynote speech on the economy, reiterated the ambitious targets laid out in the draft guidelines of the 12th FYP. He repeated the importance of investing more in machine-building, while maintaining the large share, about one-third, taken by the agro-industrial complex. He also announced, however, that investment in the energy sector would rise by 47 percent during the 12th FYP. How the leadership intends to achieve these rates of growth without squeezing other sectors of industry--while staying within the overall investment goal of 3 1/2 to 4 percent per year--was not addressed, which suggests that the leadership is still developing its resource allocation strategy.

Whatever adjustments have to be made, Gorbachev is in a stronger political position as a result of the personnel changes conducted at the Congress. With the election of Lev Zaykov to the Politburo, Gorbachev gained an additional ally with voting membership. In addition, major changes were made in the Party Secretariat, strengthening Gorbachev's hand there. Five new Secretaries were added and two--Boris Ponomarev, head of the International Department for a quarter of a century and Ivan Kapitonov, a Brezhnevite with the light industry portfolio--were dropped. With these changes, only two Brezhnev era officials remain on the 11-member Secretariat.

Appendix A

Revised CIA Estimates of Soviet GNP

Nature of the Revision

The economic growth rates presented in this paper are based on a major revision of the estimates that have been published annually in CIA's Handbook of Economic Statistics and described in detail in USSR: Measures of Economic Growth and Development, 1950-80 (issued in December 1982 under the aegis of the Joint Economic Committee). The purpose of the revision is to base the estimates on prices of a more recent year--1982 instead of 1970. The results should be regarded as preliminary and subject to further revision as more information becomes available.

The shift to a new price base affects estimates of GNP and its growth rates in three major ways when compared with previous estimates:

-- Values of output are higher, because prices in general increased between 1970 and 1982.

-- Rates of real growth--excluding price effects--are lower for GNP and most key components. This result is to be expected when prices of a more recent year are used to calculate growth rates (the "index number" effect--see Box Inset). In converting estimates of US GNP from 1972 prices to 1982 prices, the Department of Commerce obtained similar results.

-- Shares of key components of GNP are different because the components experienced diverse rates of change in both real growth and prices.

The estimates of Soviet GNP are calculated first by using prevailing 1982 prices and then adjusted so as to measure better the actual allocation of

Box Inset

To see why measured economic growth is likely to be lower, the more recent the price base used in the calculation, consider an example. Suppose we want to estimate the real growth in output of precision instruments, a group of products ranging from clocks to automation equipment to computers. Depending on the base year chosen, the change in relative prices of individual products in this group will differ because of differences in technology, scale of production, and input costs. The prices of the new and fastest growing products--like computers--tend to fall relative to other prices because of more rapid gains from advances in technology and economies of scale. Therefore, the fastest growing products will have smaller weights--and less impact on average growth of the group--in a later base year than they would in an early base year.

End of Box Inset

resources in the economy and changes over time in its potential to produce goods and services. Official Soviet prices give quite a distorted picture of the true costs of economic resources, largely because the prices include huge sales taxes, levied mostly on consumer goods, and subsidies, which affect mainly food and services. Moreover, the profits included in the prices do not reflect accurately the differences in efficiency among producers. To correct for such distortions in official prices, a so-called "factor cost adjustment" is made in which profits and indirect taxes are subtracted and subsidies and charges on fixed and working capital are imputed. The resulting values give a much better picture of patterns of resource allocation by producing sector and by final end use than the distributions shown by official prices. Also, estimates of changes in GNP using factor cost valuations provide more accurate measures of growth in production potential over time.

Results of the Revision

With both prices and real output rising, Soviet GNP increased by nearly 90 percent between 1970 and 1982, to a level of 720 billion rubles. Prices accounted for over a third of this increase, implying a rate of inflation of a little more than 2 percent per year. In contrast, official Soviet statistics for measures similar to GNP imply an inflation rate of less than half a percent per year during that period. Most Western specialists believe that these official statistics seriously understate the extent of price increases and therefore overstate Soviet economic growth.

Annual growth rates of Soviet GNP in real terms as measured in 1982 prices are with few exceptions lower than previously estimated rates measured in 1970 prices (Table A-1). Shifting the price base reduced annual rates of increase by a few tenths of a percentage point in the 1980s. The differences

Table A-1

USSR: Comparison of GNP Growth at Factor Cost in 1970 and 1982 Prices

(percent per year)

	Price Base	
	1970	1982
1966-70	5.3	4.9
1971-75	3.8	3.1
1976-80	2.7	2.3
1981-85	2.4	2.2
1981	1.9	1.7
1982	2.4	2.7
1983	3.5	3.5
1984	2.0	1.5
1985[a]	2.1	1.6

[a] Preliminary.

between rates are a little larger in earlier years--half a percentage point or more in the 1970s.

The shift to a new price base had a significant effect on the relative shares in total output coming from the two largest producing sectors--industry and agriculture (Table A-2). The share of industry is smaller when measured in 1982 prices because average wages in industry increased much less during 1971-82 than average incomes in agriculture, and the capital-output ratio increased more rapidly in agriculture than in industry. The shares of the trade and services sectors dropped somewhat, while the shares of the remaining sectors are little affected by the change in the price base.

Impact on Estimates of Defense Spending

Moving Soviet defense spending estimates from a 1970 to a 1982 price base has affected assessments of defense spending and its components in four major ways:

-- The overall level of spending rose.

-- The share of GNP allocated to defense spending increased from 12 to 14 percent in the early 1970s to 15 to 17 percent in the early 1980s.

-- Estimates of the rate of real growth decreased slightly.

-- The shares of major resource categories in total defense spending changed.

The estimates of defense spending in 1982 prices show a higher overall level of spending than did the 1970 series. The new series averages almost 50 percent higher for the period since 1970 than the series in 1970 prices, indicating that military costs increased about three percent per year. When both price change and growth in real output are taken into account, the growth in defense spending averaged over 5 percent annually during 1971-84. Price changes accounted for more than half of this increase.

Table A-2

USSR: Shares of GNP by Sector of Origin at Factor Cost, 1982
(percent)

	Value Added in 1970 Prices	Value Added in 1982 Prices
Industry	36.8	33.7
Construction	7.6	7.9
Agriculture	14.3	20.0
Transportation	10.4	10.3
Communications	1.2	1.1
Trade	7.7	6.3
Services	20.2	18.2
Military personnel	1.6	1.8
Other branches	0.3	0.7
GNP	100.0	100.0

The change to a 1982 price base shows a somewhat higher share of GNP allocated to defense than did the earlier series. This result implies that prices for defense goods and services increased faster than for civilian goods and services. During 1966-84, total defense spending increased on average by almost three percent annually--somewhat less rapidly than the series in 1970 prices.

The direction of this change in relative growth rates is what index number theory predicts (see above), but it is not a large effect. One reason for this is that in the conversion to 1982 prices the share of defense spending devoted to procurement increased, while the share of the more slowly-growing personnel category fell.

Appendix B

1985 Economic Performance: Mixed Results

Soviet economic performance in 1985 continued the uneven record compiled by the economy during the just completed the 11th Five Year Plan. Disappointing farm output held GNP growth to about 1 ½ percent, the same as in 1984. After a poor first quarter, however, the pace of Soviet non-farm growth--led by strong recovery in industry and transportation--had returned to its recent annual rate of nearly 2 ½ percent. Industry grew by almost three percent in 1985, but by more than 3 ½ percent in the last quarter. Agricultural output, in contrast, shrank for the second year in a row, although an improved grain harvest allowed Moscow to cut grain imports substantially. This reduction was helpful in dealing with a 20-percent drop in hard currency earnings, largely the result of reduced oil and arms exports, although increased borrowing and gold sales also were needed.

Industry

After showing a moderate improvement in 1983-84 from the depressed levels of the previous two years, Soviet industrial performance worsened abruptly during first quarter 1985. The USSR was hit by the coldest winter of the last 20 years. Industrial growth slumped. Output of several industrial products was so low, in fact, that the customary data on their production were omitted from official monthly plan fulfillment reports during the early months of the year. Nonetheless, for the year, industrial production rose by almost 3 percent, or roughly on par with the previous two years.

Machinery. Performance in all branches of industry improved during the course of the year. As usual, however, the increase in machinery production--the major source of consumer, investment, and defense durables--led most other

branches, although growth for the year was below the 4-percent increase in 1984 (see Table B-1). Production of computers, high-tech machine tools, and other types of automated equipment showed the best results. Growth in output of transport equipment, in contrast, was slight.

Industrial Materials. While machinery posted the best results overall, the most significant recovery was in the branches producing industrial materials--the raw materials and intermediate products used throughout Soviet industry. After registering a 2 1/2 percent decline during first quarter 1985 (compared with first quarter 1984), output of industrial materials rebounded to plus a 2 1/2 percent for the year. Growth in the production of ferrous and non-ferrous metals was on a par with 1984. The chemicals branch did somewhat better as the addition of four new ammonia plants helped boost fertilizer output by 8 percent. Only the construction-materials branch failed to rebound completely from the dismal first quarter in which output actually fell by 6 percent over that of a year earlier.

Energy. Energy production continued to rise in 1985 with strong performances in the coal, gas, and electric power sectors. Growth fell slightly, however, below that of 1984 due to a decline in oil production.

-- Soviet oil production declined for the second straight year, to 11.9 million barrels per day, or about 300,000 b/d below the 12.2 million b/d posted in 1984.

-- The Soviet gas industry finished with a record-breaking 55-billion-cubic-meter increase in 1985, a 9 1/2 percent jump over the previous year.

-- Meanwhile, Soviet coal production increased by 13 million tons, the largest annual increment during 1981-85, while electricity production

Table B-1

USSR: Growth of Industrial Production by Branch[a]

Percent

	Average Annual 1981-85	1981	1982	1983	1984	1985[b]
Industry	2.3	1.6	1.4	2.9	2.9	2.8
Machinery	2.7	1.4	1.6	2.8	4.0	3.6
Industrial materials	2.2	1.6	0.7	3.7	2.3	2.5
Ferrous metals	0.8	-0.3	-0.0	2.6	0.9	0.9
Nonferrous metals	2.0	0.3	0.8	3.0	3.0	3.0
Chemicals	4.1	4.0	2.1	6.9	3.5	4.3
Wood products	2.1	1.9	0.5	2.9	2.7	2.2
Construction materials	1.3	1.3	0.1	2.0	1.3	1.6
Energy	2.2	1.9	2.2	2.3	2.8	1.8
Fuels	1.1	1.4	1.6	1.2	0.9	0.3
Electric power	3.6	2.5	3.1	3.7	5.2	3.5
Consumer nondurables	2.1	2.0	1.3	2.1	2.0	3.0
Soft goods	1.7	1.8	-0.5	1.2	2.8	3.0
Processed foods	2.4	2.2	2.8	2.9	1.3	3.0

[a] Value added at 1982 factor cost. Based on CIA's index of Soviet industrial production.

[b] Preliminary.

climbed by more than 3 1/2 percent over 1984, almost reaching the plan target.

The Soviets were able to cope with declining oil production and less than expected output of other fuels by cutting exports, by shifting some oil users to natural gas--a process expected to continue over the longer term--and possibly by drawing down oil stocks.

Other Branches. Other industrial branches did fairly well. Overall growth of consumer nondurables was about 3 percent in 1985, up from recent rates. Light industry was not unduly affected by the bad winter, as textile production increased moderately. At the same time, the food-processing industry showed a substantial improvement over 1984--meat and fish products did particularly well.

Agriculture

While industry posted a relatively good showing, Soviet farm output shrank slightly in 1985. A small increase in overall crop production was more than offset by lower production in the livestock sector.* The same snow storms that hurt industry and spring sowing protected fall-sown grain and helped replenish the soil moisture needed for a good crop. For the year, grain production totaled an estimated 190 million metric tons according to USDA (the USSR has not published a grain figure since 1980)--the best harvest since the record 237 million tons in 1978 and some 20 million tons above the 1984 estimated results. But this achievement, together with increased production of sunflower seed, fruits, and cotton, was largely offset by lower output of key crops such as potatoes, sugar beets, and vegetables.

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* Value-added in agriculture (which excludes purchases from other sectors) declined by roughly 2 percent. (U)

The setback in the livestock sector resulted largely from declines in the number of cows--partly the result of culling of unproductive animals--and in the numbers of hogs, sheep, and goats. Meat production was up by less than 1 percent. This result was unexpected in view of the much more robust monthly growth reported for meat produced on state and collective farms that accounts for roughly two-thirds of the total. The implied reduction in the share of meat produced by the private sector may reflect an accounting shift from the private sector to production under contract with state or collective farms, a practice the leadership is encouraging. Officially, meat produced under such an arrangement is counted against state and collective farm targets.

Other Sectors

Performance in other major sectors of the economy was mixed. Transportation--a major problem in the early 1980s--proved to be another sector that rebounded from a negative first quarter and turned in a fairly strong showing. The recovery of the railroads was particularly impressive as rail freight traffic, which declined by 5.5 percent during the January-March period, posted a 2-percent gain for the year--a much better result than would have been expected in view of their poor performance after the weather-related strains of early 1982. Highway traffic was also able to overcome some of its recent problems and showed positive growth for the first time in three years. Only crude-oil pipeline shipments, which were affected by declining oil production, were lower than planned.

In contrast to the better news in transportation, probably the most disappointing showing from the Soviet perspective was in the foreign trade sector. Declining oil exports to the West precipitated an estimated 5-percent drop in overall trade--the first such reduction since the mid-1950s. Based on Soviet trade data for January-September 1985, we estimate that exports to the

West dropped by almost 20 percent from the previous year--largely the result of declines of 20 percent in oil earnings and 30 percent in Soviet arms exports. To offset the fall in earnings from lower oil sales, the Soviets stepped up borrowing, increased gold sales, and postponed some planned purchases. Imports from the West were down by as much as 8 percent. Overall, Moscow ended 1985 in a less comfortable financial position than it enjoyed at the beginning of the year, although it has still maintained its excellent credit rating.

Soviet trade with the Communist countries, in contrast, continued to increase in 1985. As in the recent past, Soviet imports from Communist countries have grown faster than Soviet exports, reducing Moscow's trade surplus with these countries, especially its East European partners. Overall, trade with the Communist countries grew by an estimated 7 percent (in ruble terms), and the share of this trade in total Soviet trade increased to 61 percent, the highest level since 1972.